



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 97

Sample # 240611

Regular PT Scheme

Labs Reporting: 68

Calcium Nitrate

Statistical Summary

Issue Date : 07/31/2024

Method Code	Analyte & Method Sample # 240611	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
001.10	Ammoniacal N, Magnesium Oxide Method (%)	6	6	1.126	0.1315	1.119		0.1319	0.0673	11.79%		0.0260	3.93%
001.99	Ammoniacal N, Other (%)	22	22	2.058	3.141	1.180		0.1490	0.0397	12.63%		0.0296	3.90%
002.99	Nitrate N, Other (%)	18	17	14.08	0.8121	14.23		0.4067	0.1233	2.86%		0.0917	2.65%
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	3	3	15.47	0.3279	15.47		0.3279	0.2366	2.12%		0.2300	2.54%
009.99	Ammoniacal Plus Nitrate N, Other (%)	1		15.15									
010.11	Total N, Modified Comprehensive (15.5%)	1		15.23									
010.12	Total N, Salicylic (15.5%)	2	2	14.47	1.035								
010.60	Total N, Combustion (15.5%)	43	43	14.36	1.766	14.67	0.6433	0.9394	0.1791	6.40%	3.40	0.1777	2.61%
010.99	Total N, Other (15.5%)	5	5	19.03	7.787	19.03	0.7154	7.787	4.353	40.92%	25.36	0.0830	2.29%
020.50	Total P2O5, ICP (%)	6	4	0.0508	0.0417	0.0513		0.0352	0.0220	68.61%		0.0140	6.25%
020.99	Total P2O5, Other (%)	1		1.812									
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	2	2	0.0450	0.0071								
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (%)	1		0.1000									
048.20	Water Soluble P2O5, Spectrophotometric (%)	1		0.0100									
050.50	Soluble K2O, ICP (Oxalate) (%)	1		0.0355									
050.51	Soluble K2O, ICP (Citrate) (%)	1		0.0600									
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	1		0.0500									
050.99	Soluble K2O, Other (%)	3	2	0.0068	0.0090	0.0103	0.4100	0.0095	0.0084	93.13%	0.05	0.0055	7.97%
060.99	Water (Free), Other (%)	1		3.600									
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	5	5	19.15	0.6598	19.15	1.0000	0.6598	0.3688	3.44%	1.54	0.5750	2.28%
101.02	Acid Soluble Ca, AA, 965.09, test portion 2006.03A-C (19%)	1		18.10									
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	14	14	19.07	1.044	19.07	1.0000	1.184	0.3956	6.21%	2.76	0.3023	2.29%
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (19%)	4	4	19.15	1.030	19.15	1.0000	1.030	0.6434	5.38%	2.40	0.3075	2.29%
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	17	16	18.50	0.6460	18.52	1.0000	0.7509	0.2347	4.05%	1.75	0.3763	2.32%
101.70	Acid Soluble Ca, Titrimetric (19%)	2	2	18.98	0.1153								
101.99	Acid Soluble Ca, Other (19%)	17	17	18.47	2.810	18.88	1.0000	0.5693	0.1726	3.02%	1.33	0.2893	2.30%
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	3	3	0.0083	0.0051	0.0083	0.2004	0.0051	0.0037	61.29%	0.06	0.0010	8.22%
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	1		0.0115									
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	2	2	0.0223	0.0174								

Method Code	Analyte & Method Sample # 240611	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
121.99	Acid Soluble Mg, Other (%)	4	4	0.1578	0.2483	0.1578	0.2079	0.2483	0.1552	157.34%	2.78	0.0296	5.28%
148.07	Total S, ICP, test portion as in 2017.02 (%)	2	2	0.1642	0.0648								
148.99	Total S, Other (%)	3	3	3.422	5.849	3.422	0.3711	5.849	4.221	170.93%	36.73	0.1439	3.32%
149.04	S - HNO3 soluble, ICP (%)	1		0.0500									
151.30	Acid Soluble As, ICP (ppm)	3	1	2.115	3.538	3.422		5.849	7.312	170.93%		0.0003	13.29%
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	3	1	1.695	1.410	3.422		5.849	7.312	170.93%		0.0003	13.29%
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	2	1	11.45	14.78								
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	1		0.3000									
151.99	Acid Soluble As, Other (ppm)	2	1	0.5897	0.5510								
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	1		0.0140									
165.99	Acid Soluble B, Other (%)	6	5	26.73	64.48	0.4104	0.0646	0.8278	0.4628	201.72%	29.88	0.0855	4.57%
181.30	Acid Soluble Cd, ICP (ppm)	4	3	0.9525	1.009	0.6533		0.9956	0.7185	152.39%		0.6700	17.06%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	3	1	0.4465	0.4844	0.6533		0.9956	1.245	152.39%		0.0030	17.06%
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	2	0	0.5950	0.5728								
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	2	0	0.1165	0.0233								
181.99	Acid Soluble Cd, Other (ppm)	2	1	0.7000	0.8485								
191.30	Acid Soluble Cr, ICP (ppm)	4	3	0.4684	0.4878	0.2246		0.0115	0.0083	5.12%		0.0456	20.03%
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	1	0.7250	0.3889								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	2	1	4.666	3.063								
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	2	1	1.025	1.307								
191.99	Acid Soluble Cr, Other (ppm)	2	2	4.475	5.692								
202.30	Acid Soluble Co, ICP (ppm)	2	2	0.2129	0.2116								
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	4	1	0.4188	0.4038	0.2129	1.0639	0.2116	0.2645	99.37%	0.46	0.0118	20.19%
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	2	0	1.380	1.584								
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	2	0	0.1195	0.0276								
202.99	Acid Soluble Co, Other (ppm)	3	2	10.46	9.858	15.64	5.6921	5.777	5.106	36.93%	2.36	3.415	10.58%
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	3	0	0.0218	0.0374	15.64	1.0000	5.777		36.93%	13.46	0.0592	2.53%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	2	1	2.128	3.009								
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	3	1	0.0002	0.0002	15.64	1.0000	5.777	7.221	36.93%	13.46	0.0592	2.53%
221.99	Acid Soluble Cu, Other (%)	4	2	0.0238	0.0473	0.0475	0.0097	0.0668	0.0591	140.83%	15.98	0.0010	6.33%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	3	2	0.0207	0.0340	0.0011	0.0051	0.0001	0.0001	6.73%	0.03	0.0002	11.23%
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (%)	1		10.00									
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	2	2	0.0498	0.0421								
241.99	Acid Soluble Fe, Other (%)	2	2	0.6725	0.9484								
251.30	Acid Soluble Pb, ICP (ppm)	5	3	1.052	2.207	0.0868		0.0275	0.0198	31.65%		0.0152	22.00%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	3	1	2.133	1.692	0.0868		0.0275	0.0343	31.65%		0.0046	22.00%
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	2	0	1.605	1.973								
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	2	1	0.5728	0.0385								
251.99	Acid Soluble Pb, Other (ppm)	2	1	1.509	1.144								
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	1		0.0000									

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261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (%)	1		0.0450									
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (%)	1		5.000									
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	1		0.0002									
261.99	Acid Soluble Mn, Other (%)	3	2	0.6583	1.139	0.9869	0.1037	1.395	1.233	141.39%	31.35	0.0327	4.01%
281.30	Acid Soluble Hg, ICP (ppm)	3	0	1.117	0.9570	0.9869		1.395		141.39%		0.0001	16.03%
281.99	Acid Soluble Hg, Other (ppm)	2	1	0.0601	0.0708								
289.30	Acid Soluble Mo, ICP (ppm)	4	3	1.428	1.156	1.904	1.5712	0.8040	0.5802	42.23%	1.19	1.128	14.52%
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	3	1	0.4617	0.4663	1.904	1.5712	0.8040	1.005	42.23%	1.19	0.0283	14.52%
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	4	1	2.023	2.495	1.904	1.5712	0.8040	1.005	42.23%	1.19	0.0283	14.52%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	2	0	0.1390	0.0552								
289.99	Acid Soluble Mo, Other (ppm)	2	1	3.318	4.269								
291.30	Acid Soluble Ni, ICP (ppm)	5	4	0.8793	0.9616	0.4991		0.5189	0.3243	103.97%		0.1389	17.76%
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	3	2	0.7340	0.2359	0.6010		0.0721	0.0638	12.00%		0.0710	17.27%
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	2	1	3.705	1.704								
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	2	0	0.1900	0.0141								
291.99	Acid Soluble Ni, Other (ppm)	3	3	14.58	14.69	14.58		14.69	10.60	100.77%		5.045	10.69%
301.30	Acid Soluble Se, ICP (ppm)	2	1	0.8725	1.100								
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	2	0	5.150	6.859								
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	1		2.342									
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	2	2.322	1.736								
301.99	Acid Soluble Se, Other (ppm)	3	1	0.7571	1.062	2.322		1.736	2.170	74.77%		0.1000	14.09%
311.32	Sodium, ICP, 2006.03 test portion (%)	1		0.0290									
311.33	Sodium, ICP, test portion as in 2017.02 (%)	3	3	0.0258	0.0128	0.0258	0.0076	0.0128	0.0092	49.63%	3.93	0.0007	6.94%
311.99	Sodium, Other (%)	2	2	1.224	1.692								
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	3	1	0.0322	0.0544	1.224	0.1274	1.692	2.114	138.17%	30.93	0.0013	3.88%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	4	2	1.250	2.500	0.0003	0.0050	0.0001	0.0001	32.64%	0.05	0.0001	13.40%
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	4	2	0.0002	0.0001	0.0003	0.0050	0.0000	0.0000	12.86%	0.02	0.0003	13.74%
321.99	Acid Soluble Zn, Other (%)	4	3	0.7262	1.443	0.9679	0.1018	1.665	1.202	172.07%	38.12	0.0247	4.02%

The Method IA Ratio = 2.33 * Robust SD / IA at the Method Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Sample # 240611

Regular PT Scheme

Calcium Nitrate

Method Precision Report

Issue Date : 07/31/2024

Method Code	Analyte & Method	# Tests Submitted	# Tests Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
001.10	Ammoniacal N, Magnesium Oxide Method (%)	6	6	1.126	0.1315	0.1309	0.0180	0.1321	11.63%	1.60%	11.74%	7.329
001.99	Ammoniacal N, Other (%)	22	21	1.449	1.338	1.338	0.0248	1.338	92.34%	1.71%	92.36%	53.87
002.99	Nitrate N, Other (%)	18	15	14.18	0.5993	0.5976	0.0626	0.6009	4.21%	0.44%	4.24%	9.603
010.60	Total N, Combustion (15.5%)	43	39	14.73	0.9256	0.9178	0.1704	0.9335	6.23%	1.16%	6.34%	5.478
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	5	5	19.15	0.6598	0.5619	0.4891	0.7449	2.93%	2.55%	3.89%	1.523
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	14	14	19.07	1.044	1.025	0.2826	1.063	5.37%	1.48%	5.57%	3.762
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	17	16	18.52	0.6622	0.6146	0.3483	0.7065	3.32%	1.88%	3.81%	2.028
101.99	Acid Soluble Ca, Other (19%)	17	16	19.11	1.059	1.028	0.3572	1.088	5.38%	1.87%	5.70%	3.046
165.99	Acid Soluble B, Other (%)	6	5	0.4104	0.8278	0.8260	0.0781	0.8297	201.27%	19.04%	202.17%	10.62

Notes: Precision data calculated when 5 or more Tests included.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 97

Sample # 240611

Regular PT Scheme

Labs Reporting: 68

Calcium Nitrate

Lab Values

Issue Date : 07/31/2024

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0498	0.9800	0.0200	1.119	0.1319	0.0260	6	-0.94	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0389	1.025	0.0300	1.119	0.1319	0.0260	6	-0.63	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0451	1.125	0.0300	1.119	0.1319	0.0260	6	0.04	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0619	1.125	0.0100	1.119	0.1319	0.0260	6	0.04	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0452	1.140	0.0000	1.119	0.1319	0.0260	6	0.14	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0444	1.360	0.0400	1.119	0.1319	0.0260	6	1.63	NA	0
001.99	Ammoniacal N, Other (%)	0584	0.9950	0.0300	1.180	0.1490	0.0296	22	-1.24	NA	0
001.99	Ammoniacal N, Other (%)	0220	1.000	0.0600	1.180	0.1490	0.0296	22	-1.21	NA	0
001.99	Ammoniacal N, Other (%)	0553	1.035	0.0500	1.180	0.1490	0.0296	22	-0.97	NA	0
001.99	Ammoniacal N, Other (%)	0368	1.046	0.0530	1.180	0.1490	0.0296	22	-0.90	NA	0
001.99	Ammoniacal N, Other (%)	0423	1.065	0.0100	1.180	0.1490	0.0296	22	-0.77	NA	0
001.99	Ammoniacal N, Other (%)	0537	1.090	0.0400	1.180	0.1490	0.0296	22	-0.60	NA	0
001.99	Ammoniacal N, Other (%)	0169	1.105	0.0100	1.180	0.1490	0.0296	22	-0.50	NA	0
001.99	Ammoniacal N, Other (%)	0255	1.115	0.0100	1.180	0.1490	0.0296	22	-0.44	NA	0
001.99	Ammoniacal N, Other (%)	0600	1.120	0.0400	1.180	0.1490	0.0296	22	-0.40	NA	0
001.99	Ammoniacal N, Other (%)	0619	1.125	0.0100	1.180	0.1490	0.0296	22	-0.37	NA	0
001.99	Ammoniacal N, Other (%)	0513	1.135	0.0300	1.180	0.1490	0.0296	22	-0.30	NA	0
001.99	Ammoniacal N, Other (%)	0027	1.150	0.0400	1.180	0.1490	0.0296	22	-0.20	NA	0
001.99	Ammoniacal N, Other (%)	0136	1.150	0.0200	1.180	0.1490	0.0296	22	-0.20	NA	0
001.99	Ammoniacal N, Other (%)	0394	1.190	0.0670	1.180	0.1490	0.0296	22	0.06	NA	0
001.99	Ammoniacal N, Other (%)	0605	1.235	0.0300	1.180	0.1490	0.0296	22	0.37	NA	0
001.99	Ammoniacal N, Other (%)	0405	1.260	0.0000	1.180	0.1490	0.0296	22	0.54	NA	0
001.99	Ammoniacal N, Other (%)	0510	1.264	0.0291	1.180	0.1490	0.0296	22	0.56	NA	0
001.99	Ammoniacal N, Other (%)	0517	1.315	0.0500	1.180	0.1490	0.0296	22	0.91	NA	0
001.99	Ammoniacal N, Other (%)	0559	1.355	0.0100	1.180	0.1490	0.0296	22	1.18	NA	0
001.99	Ammoniacal N, Other (%)	0549	1.415	0.0100	1.180	0.1490	0.0296	22	1.58	NA	0
001.99	Ammoniacal N, Other (%)	0524	7.269	0.0261	1.180	0.1490	0.0296	22	40.87	NA	0
001.99	Ammoniacal N, Other (%)	0612	14.85	0.0020	1.180	0.1490	0.0296	22	91.73	NA	0
002.99	Nitrate N, Other (%)	0368	11.75	0.2970	14.23	0.4067	0.0917	17	-6.09	NA	0
002.99	Nitrate N, Other (%)	0452	12.32	0.0000	14.23	0.4067	0.0917	17	-4.68	NA	0
002.99	Nitrate N, Other (%)	0029	13.52	0.0500	14.23	0.4067	0.0917	17	-1.75	NA	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
002.99	Nitrate N, Other (%)	0605	13.80	0.0800	14.23	0.4067	0.0917	17	-1.05	NA	0
002.99	Nitrate N, Other (%)	0553	14.08	0.3400	14.23	0.4067	0.0917	17	-0.36	NA	0
002.99	Nitrate N, Other (%)	0513	14.20	0.0500	14.23	0.4067	0.0917	17	-0.07	NA	0
002.99	Nitrate N, Other (%)	0394	14.22	0.1160	14.23	0.4067	0.0917	17	-0.02	NA	0
002.99	Nitrate N, Other (%)	0444	14.25	0.1000	14.23	0.4067	0.0917	17	0.06	NA	0
002.99	Nitrate N, Other (%)	0498	14.35	0.1000	14.23	0.4067	0.0917	17	0.31	NA	0
002.99	Nitrate N, Other (%)	0423	14.40	0.0300	14.23	0.4067	0.0917	17	0.42	NA	0
002.99	Nitrate N, Other (%)	0600	14.45	0.2000	14.23	0.4067	0.0917	17	0.55	NA	0
002.99	Nitrate N, Other (%)	0537	14.48	0.1100	14.23	0.4067	0.0917	17	0.61	NA	0
002.99	Nitrate N, Other (%)	0549	14.48	0.0100	14.23	0.4067	0.0917	17	0.61	NA	0
002.99	Nitrate N, Other (%)	0517	14.49	0.0700	14.23	0.4067	0.0917	17	0.64	NA	0
002.99	Nitrate N, Other (%)	0584	14.54	0.1200	14.23	0.4067	0.0917	17	0.77	NA	0
002.99	Nitrate N, Other (%)	0559	14.55	0.0100	14.23	0.4067	0.0917	17	0.79	NA	0
002.99	Nitrate N, Other (%)	0220	14.73	0.0100	14.23	0.4067	0.0917	17	1.23	NA	0
002.99	Nitrate N, Other (%)	0136	14.85	0.5900	14.23	0.4067	0.0917	17	1.52	NA	1
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	0619	15.15	0.3000	15.47	0.3279	0.2300	3	-0.97		0
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	0444	15.45	0.3000	15.47	0.3279	0.2300	3	-0.06		0
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	0517	15.81	0.0900	15.47	0.3279	0.2300	3	1.03		0
009.99	Ammoniacal Plus Nitrate N, Other (%)	0619	15.15	0.3000				1			0
010.11	Total N, Modified Comprehensive (15.5%)	0510	15.23	0.0503				1			0
010.12	Total N, Salicylic (15.5%)	0117	13.74	0.0467				2			0
010.12	Total N, Salicylic (15.5%)	0568	15.20	0.0000				2			0
010.60	Total N, Combustion (15.5%)	0542	6.660	0.2400	14.67	0.9394	0.1777	43	-8.52	Low	0
010.60	Total N, Combustion (15.5%)	0422	9.245	0.2100	14.67	0.9394	0.1777	43	-5.77	Low	0
010.60	Total N, Combustion (15.5%)	0523	11.73	0.7400	14.67	0.9394	0.1777	43	-3.12	Low	0
010.60	Total N, Combustion (15.5%)	0588	11.75	0.7000	14.67	0.9394	0.1777	43	-3.11	Low	0
010.60	Total N, Combustion (15.5%)	0234	12.88	0.4000	14.67	0.9394	0.1777	43	-1.90	Low	0
010.60	Total N, Combustion (15.5%)	0035	13.30	0.0000	14.67	0.9394	0.1777	43	-1.46	Low	0
010.60	Total N, Combustion (15.5%)	0185	13.37	0.0300	14.67	0.9394	0.1777	43	-1.39	Low	0
010.60	Total N, Combustion (15.5%)	0452	13.42	0.0100	14.67	0.9394	0.1777	43	-1.33	Low	0
010.60	Total N, Combustion (15.5%)	0095	13.55	0.0100	14.67	0.9394	0.1777	43	-1.19	Low	0
010.60	Total N, Combustion (15.5%)	0324	13.70	0.6000	14.67	0.9394	0.1777	43	-1.03	Low	0
010.60	Total N, Combustion (15.5%)	0106	13.93	0.0700	14.67	0.9394	0.1777	43	-0.79	Low	0
010.60	Total N, Combustion (15.5%)	0521	14.39	0.0000	14.67	0.9394	0.1777	43	-0.29	OK	0
010.60	Total N, Combustion (15.5%)	0377	14.55	0.1600	14.67	0.9394	0.1777	43	-0.13	OK	0
010.60	Total N, Combustion (15.5%)	0389	14.56	0.0600	14.67	0.9394	0.1777	43	-0.11	OK	0
010.60	Total N, Combustion (15.5%)	0025	14.57	0.2500	14.67	0.9394	0.1777	43	-0.11	OK	0
010.60	Total N, Combustion (15.5%)	0102	14.59	0.1100	14.67	0.9394	0.1777	43	-0.09	OK	0
010.60	Total N, Combustion (15.5%)	0451	14.62	0.1600	14.67	0.9394	0.1777	43	-0.05	OK	0
010.60	Total N, Combustion (15.5%)	0368	14.65	0.0550	14.67	0.9394	0.1777	43	-0.01	OK	0
010.60	Total N, Combustion (15.5%)	0561	14.84	0.0400	14.67	0.9394	0.1777	43	0.18	OK	0
010.60	Total N, Combustion (15.5%)	0027	14.85	0.3900	14.67	0.9394	0.1777	43	0.19	OK	0
010.60	Total N, Combustion (15.5%)	0405	14.88	0.0200	14.67	0.9394	0.1777	43	0.23	OK	0

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010.60	Total N, Combustion (15.5%)	0177	14.93	0.3370	14.67	0.9394	0.1777	43	0.28	OK	0
010.60	Total N, Combustion (15.5%)	0220	14.96	0.0200	14.67	0.9394	0.1777	43	0.31	OK	0
010.60	Total N, Combustion (15.5%)	0043	14.97	0.2800	14.67	0.9394	0.1777	43	0.32	OK	0
010.60	Total N, Combustion (15.5%)	0023	15.02	0.0500	14.67	0.9394	0.1777	43	0.37	OK	0
010.60	Total N, Combustion (15.5%)	0292	15.05	0.0100	14.67	0.9394	0.1777	43	0.40	OK	0
010.60	Total N, Combustion (15.5%)	0543	15.08	0.0000	14.67	0.9394	0.1777	43	0.44	OK	0
010.60	Total N, Combustion (15.5%)	0040	15.10	0.2000	14.67	0.9394	0.1777	43	0.46	OK	0
010.60	Total N, Combustion (15.5%)	0612	15.15	0.8900	14.67	0.9394	0.1777	43	0.51	OK	0
010.60	Total N, Combustion (15.5%)	0291	15.20	0.0100	14.67	0.9394	0.1777	43	0.56	OK	0
010.60	Total N, Combustion (15.5%)	0055	15.20	0.0200	14.67	0.9394	0.1777	43	0.57	OK	0
010.60	Total N, Combustion (15.5%)	0494	15.22	0.0700	14.67	0.9394	0.1777	43	0.58	OK	0
010.60	Total N, Combustion (15.5%)	0255	15.24	0.2360	14.67	0.9394	0.1777	43	0.60	OK	0
010.60	Total N, Combustion (15.5%)	0073	15.31	0.0100	14.67	0.9394	0.1777	43	0.68	OK	0
010.60	Total N, Combustion (15.5%)	0136	15.37	0.3000	14.67	0.9394	0.1777	43	0.75	High	0
010.60	Total N, Combustion (15.5%)	0472	15.39	0.1200	14.67	0.9394	0.1777	43	0.77	High	0
010.60	Total N, Combustion (15.5%)	0260	15.40	0.1300	14.67	0.9394	0.1777	43	0.77	High	0
010.60	Total N, Combustion (15.5%)	0029	15.41	0.0300	14.67	0.9394	0.1777	43	0.79	High	0
010.60	Total N, Combustion (15.5%)	0485	15.50	0.2000	14.67	0.9394	0.1777	43	0.89	High	0
010.60	Total N, Combustion (15.5%)	0169	15.51	0.0200	14.67	0.9394	0.1777	43	0.90	High	0
010.60	Total N, Combustion (15.5%)	0421	15.77	0.5700	14.67	0.9394	0.1777	43	1.17	High	0
010.60	Total N, Combustion (15.5%)	0527	15.86	0.4230	14.67	0.9394	0.1777	43	1.27	High	0
010.60	Total N, Combustion (15.5%)	0423	16.75	0.0000	14.67	0.9394	0.1777	43	2.22	High	0
010.99	Total N, Other (15.5%)	0513	15.33	0.0800	19.03	7.787	0.0830	5	-0.48		0
010.99	Total N, Other (15.5%)	0394	15.41	0.1830	19.03	7.787	0.0830	5	-0.47		0
010.99	Total N, Other (15.5%)	0537	15.56	0.0800	19.03	7.787	0.0830	5	-0.45		0
010.99	Total N, Other (15.5%)	0559	15.90	0.0100	19.03	7.787	0.0830	5	-0.40		0
010.99	Total N, Other (15.5%)	0524	32.96	0.0620	19.03	7.787	0.0830	5	1.79		0
020.50	Total P2O5, ICP (%)	0524	0.0050	0.0000	0.0513	0.0352	0.0140	4	-1.12		0
020.50	Total P2O5, ICP (%)	0588	0.0505	0.0210	0.0513	0.0352	0.0140	4	-0.02		0
020.50	Total P2O5, ICP (%)	0422	0.0595	0.0010	0.0513	0.0352	0.0140	4	0.20		0
020.50	Total P2O5, ICP (%)	0472	0.0900	0.0200	0.0513	0.0352	0.0140	4	0.93		0
020.50	Total P2O5, ICP (%)	0552	0.0000	0.0000	0.0513	0.0352	0.0140	4			4
020.50	Total P2O5, ICP (%)	0423	< 0.1		0.0513	0.0352	0.0140	4			5
020.99	Total P2O5, Other (%)	0572	1.812	0.0409				1			0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (0472	0.0400	0.0000				2			0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (0568	0.0500	0.0000				2			0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (%)	0423	< 0.1					0			5
048.20	Water Soluble P2O5, Spectrophotometric (%)	0472	0.0100	0.0000				1			0
050.50	Soluble K2O, ICP (Oxalate) (%)	0422	0.0355	0.0030				1			0
050.51	Soluble K2O, ICP (Citrate) (%)	0568	0.0600	0.0000				1			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0423	< 0.05					0			5
050.99	Soluble K2O, Other (%)	0524	0.0035	0.0010				2			0
050.99	Soluble K2O, Other (%)	0588	0.0170	0.0100				2			0

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050.99	Soluble K2O, Other (%)	0552	0.0000	0.0000				2			4
060.99	Water (Free), Other (%)	0510	3.600	0.0170				1			0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	0485	18.40	1.200	19.15	0.6598	0.5750	5	-1.14		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	0534	18.90	0.0000	19.15	0.6598	0.5750	5	-0.38		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	0073	19.10	0.0300	19.15	0.6598	0.5750	5	-0.09		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	0553	19.17	0.1000	19.15	0.6598	0.5750	5	0.02		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (19%)	0029	20.21	0.9700	19.15	0.6598	0.5750	5	1.59		0
101.02	Acid Soluble Ca, AA, 965.09, test portion 2006.03A-C (19%)	0498	18.10	0.2000				1			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0568	17.40	0.0000	19.07	1.184	0.3023	14	-1.41	Low	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0049	17.53	0.8806	19.07	1.184	0.3023	14	-1.30	Low	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0255	18.15	0.1400	19.07	1.184	0.3023	14	-0.78	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0402	18.16	0.0180	19.07	1.184	0.3023	14	-0.77	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0234	18.70	0.5500	19.07	1.184	0.3023	14	-0.32	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0451	18.72	0.7100	19.07	1.184	0.3023	14	-0.30	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0324	18.75	0.5000	19.07	1.184	0.3023	14	-0.27	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0377	19.30	0.0800	19.07	1.184	0.3023	14	0.19	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0619	19.40	0.4000	19.07	1.184	0.3023	14	0.28	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0035	19.90	0.4000	19.07	1.184	0.3023	14	0.70	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0422	19.91	0.0800	19.07	1.184	0.3023	14	0.71	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0291	19.94	0.0100	19.07	1.184	0.3023	14	0.73	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0444	20.45	0.2100	19.07	1.184	0.3023	14	1.16	High	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (19%)	0452	20.74	0.0800	19.07	1.184	0.3023	14	1.41	High	0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (19%)	0423	18.48	0.0600	19.15	1.030	0.3075	4	-0.65		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (19%)	0405	18.65	0.3000	19.15	1.030	0.3075	4	-0.48		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (19%)	0220	18.79	0.3100	19.15	1.030	0.3075	4	-0.35		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (19%)	0095	20.68	0.5600	19.15	1.030	0.3075	4	1.49		0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0177	17.43	0.0325	18.52	0.7509	0.3763	16	-1.45	Low	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0055	17.45	0.4250	18.52	0.7509	0.3763	16	-1.42	Low	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0102	17.58	0.7300	18.52	0.7509	0.3763	16	-1.26	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0106	17.58	0.6523	18.52	0.7509	0.3763	16	-1.26	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0040	18.40	0.6300	18.52	0.7509	0.3763	16	-0.17	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0494	18.59	0.3100	18.52	0.7509	0.3763	16	0.08	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0292	18.67	0.0400	18.52	0.7509	0.3763	16	0.20	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0136	18.70	0.8000	18.52	0.7509	0.3763	16	0.24	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0521	18.73	0.0000	18.52	0.7509	0.3763	16	0.27	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0543	18.73	0.0210	18.52	0.7509	0.3763	16	0.28	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0394	18.84	0.0770	18.52	0.7509	0.3763	16	0.43	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0472	18.98	0.0500	18.52	0.7509	0.3763	16	0.60	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0527	18.98	0.1023	18.52	0.7509	0.3763	16	0.61	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0169	19.01	0.0200	18.52	0.7509	0.3763	16	0.65	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0421	19.05	0.7800	18.52	0.7509	0.3763	16	0.70	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0612	19.65	0.9900	18.52	0.7509	0.3763	16	1.50	High	0
101.33	Acid Soluble Ca, ICP, 2017.02 (19%)	0515	18.20	2.710	18.52	0.7509	0.3763	16	-0.43	OK	1

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101.70	Acid Soluble Ca, Titrimetric (19%)	0517	18.90	0.1000				2			0
101.70	Acid Soluble Ca, Titrimetric (19%)	0510	19.06	0.0308				2			0
101.99	Acid Soluble Ca, Other (19%)	0572	8.322	0.3194	18.88	0.5693	0.2893	17	-18.55	Low	0
101.99	Acid Soluble Ca, Other (19%)	0542	17.84	0.5700	18.88	0.5693	0.2893	17	-1.84	Low	0
101.99	Acid Soluble Ca, Other (19%)	0605	18.51	0.1100	18.88	0.5693	0.2893	17	-0.66	OK	0
101.99	Acid Soluble Ca, Other (19%)	0513	18.54	0.0400	18.88	0.5693	0.2893	17	-0.60	OK	0
101.99	Acid Soluble Ca, Other (19%)	0561	18.56	0.0000	18.88	0.5693	0.2893	17	-0.56	OK	0
101.99	Acid Soluble Ca, Other (19%)	0368	18.60	0.2895	18.88	0.5693	0.2893	17	-0.50	OK	0
101.99	Acid Soluble Ca, Other (19%)	0584	18.68	0.0800	18.88	0.5693	0.2893	17	-0.35	OK	0
101.99	Acid Soluble Ca, Other (19%)	0559	18.78	0.0100	18.88	0.5693	0.2893	17	-0.19	OK	0
101.99	Acid Soluble Ca, Other (19%)	0600	18.92	0.1300	18.88	0.5693	0.2893	17	0.06	OK	0
101.99	Acid Soluble Ca, Other (19%)	0307	18.95	1.100	18.88	0.5693	0.2893	17	0.12	OK	0
101.99	Acid Soluble Ca, Other (19%)	0537	18.95	0.1000	18.88	0.5693	0.2893	17	0.12	OK	0
101.99	Acid Soluble Ca, Other (19%)	0389	19.03	0.0800	18.88	0.5693	0.2893	17	0.26	OK	0
101.99	Acid Soluble Ca, Other (19%)	0523	19.12	0.0080	18.88	0.5693	0.2893	17	0.42	OK	0
101.99	Acid Soluble Ca, Other (19%)	0619	19.40	0.4000	18.88	0.5693	0.2893	17	0.91	OK	0
101.99	Acid Soluble Ca, Other (19%)	0552	19.57	1.130	18.88	0.5693	0.2893	17	1.20	OK	0
101.99	Acid Soluble Ca, Other (19%)	0023	19.61	0.1840	18.88	0.5693	0.2893	17	1.27	OK	0
101.99	Acid Soluble Ca, Other (19%)	0515	22.72	0.9700	18.88	0.5693	0.2893	17	6.73	High	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0422	0.0025	0.0010	0.0083	0.0051	0.0010	3	-1.14		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0035	0.0105	0.0010	0.0083	0.0051	0.0010	3	0.42		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.0120	0.0000	0.0083	0.0051	0.0010	3	0.72		0
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	0423	0.0115	0.0050				1			0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	0.0100	0.0000				2			0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0515	0.0347	0.0355				2			0
121.99	Acid Soluble Mg, Other (%)	0542	0.0104	0.0011	0.1578	0.2483	0.0296	4	-0.59		0
121.99	Acid Soluble Mg, Other (%)	0515	0.0272	0.0004	0.1578	0.2483	0.0296	4	-0.53		0
121.99	Acid Soluble Mg, Other (%)	0552	0.0650	0.1100	0.1578	0.2483	0.0296	4	-0.37		0
121.99	Acid Soluble Mg, Other (%)	0572	0.5287	0.0069	0.1578	0.2483	0.0296	4	1.49		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0515	0.1184	0.0014				2			0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0472	0.2100	0.0400				2			0
148.99	Total S, Other (%)	0542	0.0105	0.0003	3.422	5.849	0.1439	3	-0.58		0
148.99	Total S, Other (%)	0422	0.0795	0.0010	3.422	5.849	0.1439	3	-0.57		0
148.99	Total S, Other (%)	0572	10.18	0.4303	3.422	5.849	0.1439	3	1.15		0
149.04	S - HNO3 soluble, ICP (%)	0423	< 0.05					0			5
151.30	Acid Soluble As, ICP (ppm)	0523	0.1461	0.0279				1			0
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000				1			4
151.30	Acid Soluble As, ICP (ppm)	0605	< 6.2					1			5
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0485	1.886	1.989				1			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	< 0.2					1			5
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	< 3					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0515	21.91	5.310				1			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	< 1					1			5

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	< 0.3					0			5
151.99	Acid Soluble As, Other (ppm)	0572	0.9793	0.0232				1			0
151.99	Acid Soluble As, Other (ppm)	0220	< 0.2					1			5
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0422	0.0140	0.0000				1			0
165.99	Acid Soluble B, Other (%)	0515	0.0136	0.0018	0.4104	0.8278	0.0855	5	-0.42		0
165.99	Acid Soluble B, Other (%)	0542	0.0141	0.0001	0.4104	0.8278	0.0855	5	-0.42		0
165.99	Acid Soluble B, Other (%)	0472	0.0200	0.0000	0.4104	0.8278	0.0855	5	-0.41		0
165.99	Acid Soluble B, Other (%)	0552	0.1150	0.2100	0.4104	0.8278	0.0855	5	-0.31		0
165.99	Acid Soluble B, Other (%)	0572	1.889	0.1301	0.4104	0.8278	0.0855	5	1.56		0
165.99	Acid Soluble B, Other (%)	0423	158.4	8.120	0.4104	0.8278	0.0855	5	166.53		1
181.30	Acid Soluble Cd, ICP (ppm)	0394	0.0775	0.0030	0.6533	0.9956	0.6700	3	-0.58		0
181.30	Acid Soluble Cd, ICP (ppm)	0523	0.0795	0.0170	0.6533	0.9956	0.6700	3	-0.58		0
181.30	Acid Soluble Cd, ICP (ppm)	0255	1.803	1.990	0.6533	0.9956	0.6700	3	1.15		0
181.30	Acid Soluble Cd, ICP (ppm)	0605	< 1.85		0.6533	0.9956	0.6700	3			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0485	0.2395	0.0150				1			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	< 0.1					1			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	< 1					1			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0515	< 0.19					0			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	< 1					0			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0515	< 0.133					0			5
181.99	Acid Soluble Cd, Other (ppm)	0572	1.300	0.0364				1			0
181.99	Acid Soluble Cd, Other (ppm)	0220	< 0.1					1			5
191.30	Acid Soluble Cr, ICP (ppm)	0394	0.2115	0.0230	0.2246	0.0115	0.0456	3	-1.14		0
191.30	Acid Soluble Cr, ICP (ppm)	0524	0.2291	0.0280	0.2246	0.0115	0.0456	3	0.39		0
191.30	Acid Soluble Cr, ICP (ppm)	0523	0.2331	0.0858	0.2246	0.0115	0.0456	3	0.74		0
191.30	Acid Soluble Cr, ICP (ppm)	0605	< 1.2		0.2246	0.0115	0.0456	3			5
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	0.4500	0.1000				1			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	< 1					1			5
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0515	6.832	1.228				1			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	1.949	0.7340				1			0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					1			5
191.99	Acid Soluble Cr, Other (ppm)	0220	0.4500	0.1000				2			0
191.99	Acid Soluble Cr, Other (ppm)	0572	8.500	1.599				2			0
202.30	Acid Soluble Co, ICP (ppm)	0523	0.0633	0.0118				2			0
202.30	Acid Soluble Co, ICP (ppm)	0542	0.3625	0.0350				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0423	0.3750	0.0100				1			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	< 0.1					1			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0485	< 0.2					1			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	< 1					1			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0515	< 0.26					0			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 2.5					0			5

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	< 0.139					0			5
202.99	Acid Soluble Co, Other (ppm)	0572	11.56	0.0592				2			0
202.99	Acid Soluble Co, Other (ppm)	0255	19.73	6.770				2			0
202.99	Acid Soluble Co, Other (ppm)	0220	< 0.1					2			5
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0422	0.0000	0.0000				0			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0255	0.0005	0.0010				0			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0552	0.0650	0.1300				0			4
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0423	4.255	0.3100				1			0
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0515	0.0003	0.0002				1			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0106	0.0000	0.0000				1			4
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0002					1			5
221.99	Acid Soluble Cu, Other (%)	0515	0.0002	0.0000				2			0
221.99	Acid Soluble Cu, Other (%)	0572	0.0947	0.0010				2			0
221.99	Acid Soluble Cu, Other (%)	0637	0.0000	0.0000				2			4
221.99	Acid Soluble Cu, Other (%)	0368	0.0003	0.0005				2			4
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0422	0.0010	0.0000				2			0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0035	0.0011	0.0002				2			0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0552	0.0600	0.1200				2			4
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (%)	0423	< 10					0			5
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	0.0200	0.0000				2			0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0515	0.0795	0.0100				2			0
241.99	Acid Soluble Fe, Other (%)	0542	0.0019	0.0003				2			0
241.99	Acid Soluble Fe, Other (%)	0572	1.343	0.0053				2			0
251.30	Acid Soluble Pb, ICP (ppm)	0524	0.0656	0.0046	0.0868	0.0275	0.0152	3	-0.77		0
251.30	Acid Soluble Pb, ICP (ppm)	0394	0.0770	0.0260	0.0868	0.0275	0.0152	3	-0.36		0
251.30	Acid Soluble Pb, ICP (ppm)	0523	0.1179	0.0149	0.0868	0.0275	0.0152	3	1.13		0
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000	0.0868	0.0275	0.0152	3			4
251.30	Acid Soluble Pb, ICP (ppm)	0605	< 5		0.0868	0.0275	0.0152	3			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0485	1.700	0.6200				1			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	< 0.7					1			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	< 4					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0515	< 0.21					0			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3					0			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0515	0.5455	0.6010				1			0
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	< 0.6					1			5
251.99	Acid Soluble Pb, Other (ppm)	0572	2.318	0.0339				1			0
251.99	Acid Soluble Pb, Other (ppm)	0220	< 0.7					1			5
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0422	0.0000	0.0000				0			4
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (%)	0552	0.0450	0.0900				0			4
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (%)	0423	< 5					0			5
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0002	0.0000				1			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
261.99	Acid Soluble Mn, Other (%)	0542	0.0003	0.0001				2			0
261.99	Acid Soluble Mn, Other (%)	0572	1.973	0.0653				2			0
261.99	Acid Soluble Mn, Other (%)	0515	< 0.0011					2			5
281.30	Acid Soluble Hg, ICP (ppm)	0515	< 0.1					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0605	< 1.25					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0405	< 2					0			5
281.99	Acid Soluble Hg, Other (ppm)	0572	0.1102	0.0011				1			0
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					1			5
289.30	Acid Soluble Mo, ICP (ppm)	0542	1.384	0.7950	1.904	0.8040	1.128	3	-0.65		0
289.30	Acid Soluble Mo, ICP (ppm)	0524	1.498	0.0283	1.904	0.8040	1.128	3	-0.50		0
289.30	Acid Soluble Mo, ICP (ppm)	0255	2.830	2.560	1.904	0.8040	1.128	3	1.15		0
289.30	Acid Soluble Mo, ICP (ppm)	0637	< 0.001		1.904	0.8040	1.128	3			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	0.1850	0.0300				1			0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0485	< 0.2					1			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	< 1					1			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0423	5.360	0.1600				1			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0106	0.0000	0.0000				1			4
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0515	< 0.23					1			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0515	< 0.178					0			5
289.99	Acid Soluble Mo, Other (ppm)	0572	6.337	0.1538				1			0
289.99	Acid Soluble Mo, Other (ppm)	0220	< 0.3					1			5
291.30	Acid Soluble Ni, ICP (ppm)	0524	0.0650	0.0300	0.4991	0.5189	0.1389	4	-0.84		0
291.30	Acid Soluble Ni, ICP (ppm)	0523	0.2815	0.0735	0.4991	0.5189	0.1389	4	-0.42		0
291.30	Acid Soluble Ni, ICP (ppm)	0394	0.4010	0.1040	0.4991	0.5189	0.1389	4	-0.19		0
291.30	Acid Soluble Ni, ICP (ppm)	0542	1.249	0.3480	0.4991	0.5189	0.1389	4	1.45		0
291.30	Acid Soluble Ni, ICP (ppm)	0605	< 2.4		0.4991	0.5189	0.1389	4			5
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	0.5500	0.1000				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0485	0.6520	0.0420				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	< 1					2			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0515	4.910	3.624				1			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	< 0.18					0			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	< 0.2					0			5
291.99	Acid Soluble Ni, Other (ppm)	0220	0.8000	0.0000	14.58	14.69	5.045	3	-0.94		0
291.99	Acid Soluble Ni, Other (ppm)	0572	12.90	1.171	14.58	14.69	5.045	3	-0.11		0
291.99	Acid Soluble Ni, Other (ppm)	0255	30.04	8.920	14.58	14.69	5.045	3	1.05		0
301.30	Acid Soluble Se, ICP (ppm)	0523	0.0951	0.1171				1			0
301.30	Acid Soluble Se, ICP (ppm)	0605	< 1.65					1			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	< 0.3					0			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					0			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0515	2.342	4.108				1			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	1.095	0.1330				2			0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	3.550	0.1000				2			0
301.99	Acid Soluble Se, Other (ppm)	0572	1.971	0.0563				1			0
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				1			4
301.99	Acid Soluble Se, Other (ppm)	0220	< 0.3					1			5
311.32	Sodium, ICP, 2006.03 test portion (%)	0422	0.0290	0.0000				1			0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0423	0.0135	0.0010	0.0258	0.0128	0.0007	3	-0.96		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.0248	0.0003	0.0258	0.0128	0.0007	3	-0.08		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0035	0.0390	0.0000	0.0258	0.0128	0.0007	3	1.04		0
311.99	Sodium, Other (%)	0542	0.0282	0.0013				2			0
311.99	Sodium, Other (%)	0572	2.420	0.0172				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0015	0.0010				1			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0422	0.0000	0.0000				1			4
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0552	0.0950	0.1900				1			4
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0485	0.0003	0.0001				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0220	0.0004	0.0000				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	< 0.0003					2			5
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0423	< 5					2			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0515	0.0003	0.0003				2			0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0394	0.0003	0.0000				2			0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0106	0.0000	0.0000				2			4
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	< 0.0003					2			5
321.99	Acid Soluble Zn, Other (%)	0368	0.0003	0.0003	0.9679	1.665	0.0247	3	-0.58		0
321.99	Acid Soluble Zn, Other (%)	0523	0.0125	0.0090	0.9679	1.665	0.0247	3	-0.57		0
321.99	Acid Soluble Zn, Other (%)	0572	2.891	0.0647	0.9679	1.665	0.0247	3	1.15		0
321.99	Acid Soluble Zn, Other (%)	0637	< 0.001		0.9679	1.665	0.0247	3			5

Interpreting Z Scores and Flags:

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

Notes:

*Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Identical duplicates not included in calculation of Rob R-bar. IA Status describes where your result is relative to the Assigned Value ± IA. Red indicates Higher or Lower and Green indicates within the IA range about the Robust mean. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for